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498A. Railway Plants in East China

There are six large railway plants in the East China Region.[4]

Name	Location
Ssu-fang Railway Plant	Tsingtao, Shantung
Tsinan Railway Plant	Tsinan, Shantung
P'u-chen Railway Plant	P'u-chen, Kiangsu
Ch'i-shu-yen Railway Plant	Wu-chin, Kiangsu
Hsiao-shan Railway Plant	Hsiao-shan, Chekiang
Chang-hua-pin Railway Bridge Plant	Shanghai

Of the railway plants, listed above, Ssu-fang, P'u-chen, and Ch'i-shu-yen are the best equipped.[5]

B. Through-Express Trains

497 There are two through-express trains operating between East China and other regions: The Peking-Shanghai through-express train

4. Chung-kung Wen-ti [Chinese Communist Problems], Hong Kong, Tzu-yu ch'u-pan-she, Series No. 1, 1954, pp. 75-76.

5. Ibid., p. 76.

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497 starts from Cheng-yang-men Station in Peking, passing through Tientsin, Te-chou, Tsinan, T'ai-an, Hsü-chou, Nanking, Chen-chiang, Wu-hsi, Soochow, and reaches Shanghai. The journey takes about thirty-one hours and thirty-five minutes, covering a distance of 1,465 kilometers.[6] The Shanghai-Canton through-express train starts from Shanghai, passing through Hangchow, Chin-hua, Ying-t'an, Chu-chou, Heng-yang, Shao-kuan, and reaches Canton. The journey takes forty-three hours and twenty-four minutes, covering a distance of 1,822 kilometers.[7]

II. HIGHWAY ROUTES IN EAST CHINA

491 The exact length of the highway network in East China is difficult to determine, because (1) the provincial reports on the extent of highways in this region differ from those made by national surveys, (2) no distinction is made between provincial roads and country roads, (3) there is a lack of consistency in reports concering the completion of the construction of roads and the number of roads opened or closed to traffic. In the present study, all the major national highways which pass through the East

6. Ibid., p. 85.
7. Ibid.

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SEVEN

Transport Routes and Trade in the Hinterland

496 The commercial ascendancy of Shanghai was due in large measure to its favorable orientation to the major sources of China's leading trade goods. This specific locational advantage will now be examined in a more detailed analysis of the production and transport of the staple articles of trade. In the interests of clarity, the main transport routes leading to the city will be treated first so that the discussion of production and movement of goods which follows it may be read in the light of the environmental conditions which directed their flow.

Transport Routes

The first railway connection with Shanghai was the Nanking line (193 miles or 308 kilometers), which was opened to traffic in 1908. It was followed in 1909 by the line to Hangchow (118 miles or 188 kilometers), and these two have remained the only rail connections aside from the spur to Woosung. By 1936, the total length of railways tributary to Shanghai was about 600 miles, as against 1900 497 for Peking and 1300 for Tientsin (map 8). From 1930 to 1936, the Hangchow and Nanking lines each carried annually about one million tons per mile of line, or about the average for a moderately important branch line in the United States. The same figure for the main line of the Pennsylvania Railroad during this period was about 38 million tons.[1]

Despite the fact that Shanghai is by far the largest and most completely industrialized city in China, the total haulage of the two railway lines connected with it averaged between 1930 and 1936 only 7 per cent of the total kilometer/tons hauled by Chinese

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497 railways (exclusive of Manchuria).* The role of railways in the growth of Shanghai has clearly been minor, and they have never become large volume carriers on a Western scale, despite their connections with most of the several large cities in the delta, and despite the relatively great agricultural and industrial productivity of the lower Yangtze basin.

491 The highway pattern is also relatively little developed. Two roads run south from Shanghai to Hangchow (both opened to traffic in 1932), and one runs north to Nanking. A large proportion of the highway mileage runs beside the railway lines, which makes the highways less useful than if they ran independently of or as feeders for the railways. The northern and southern highway routes are joined by a road from Kashing to Soochow, but the few remaining roads are either short-distance feeders or dead ends. There is no direct road connection between the major cities of Soochow and Wusih or Nanking. With minor exceptions in the vicinity of Shanghai, none of these surfaces were paved, and nearly all of the mileage is two-lane only.

494 The paucity of roads is presumably not due either to construction difficulties or to lack of general trade volume, although level ground in this area is usually accompanied by a dense network of natural and artificial waterways over which bridges must be built. The roads were constructed primarily for tourists and for general automobile travel rather than for commercial haulage. At least two of the major links (the shore road from Hangchow to Shanghai and the northern road from Shanghai to Soochow) were legally closed to vehicles over three tons gross weight from the time of their construction.[3] Due partly to the high cost of fuel, trucks, and parts, and partly to the generally pre-industrial nature of the economy, the volume of truck haulage on all of these roads has remained slight.[4]

505 Within the delta, however, and within most of the Yangtze basin, goods can move so easily and cheaply by water that there is little

496 * The total length of railways in China proper in 1936 was 9,712 kilometers, of which the two lines discussed above accounted for 753 kilometers (including sidings, loops, branches, and 112 kilometers of second track in and on the outskirts of Shanghai, Nanking, and Hangchow), or 8.3 per cent.[2]

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438 The general impression from the foregoing summary of factors, and from the market reports themselves, is twofold: firstly, that there is an ample margin of rice supply for Shanghai, from various sources, at all times at least until 1936; and secondly, that by far the largest part of that supply comes from within a radius of approximately 75 miles and moves to the city largely by water transport. There is some statistical evidence which bears on the problem, and the following figures compiled from the records of the Maritime Customs provide as close a check as can be obtained at present.

Local, Out-Province, and Foreign Rice

438 439 The Food Commission of the Bureau of Social Affairs of the City Government (Chinese) of Greater Shanghai published in 1931 a statistical study of the sources of Shanghai's food supply, using figures taken from the records of the Maritime and Native Customs.[29] The study shows a yearly average during the period 1925–1930 of 780,000,000 pounds of rice brought into the city from all sources. This is stated as a rough estimate because there are no means of recording all of the small shipments arriving from the delta by junk and sampan via the many small creeks and canals which converge on Shanghai.

The total figure is broken down in the table below, according to means of entry into the city.

from inland areas via the Whangpoo, Yangtze, or Soochow Creek:		580,000,000 pounds
from the sea via the Yangtze:		140,000,000 pounds
domestic origin	30,000,000	
foreign origin	130,000,000	
via overland routes (means of transport not specified)		60,000,000 pounds
TOTAL		780,000,000 pounds

438 497 Railway haulage figures[30] indicate that nearly all of the 60,000,000 pounds arriving by overland routes came in by rail from cities and towns along the Yangtze toward Nanking, Tanyang, and Changchow in particular. Although these places are on or near the Yangtze, they are farther from Shanghai than its main rice supply areas so

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that rail transport to Shanghai can compete with water transport. Given the lines, one might assume that they would carry the most important product of the delta. The surprising fact is that they carry such insignificant amounts. Total figures given by the railway for rice haulage leave little or no margin for highway transport of rice, and we may assume that it is negligible.

The relatively small figure of 30,000,000 pounds given for arrivals by sea from domestic sources is probably accounted for by small-lot junk cargoes from the northern and southern shores of Hangchow Bay, and from the seaward-extending tip of Kiangsu just north of the Yangtze. South of Hangchow Bay all of the coastal areas import rice to balance their local rice deficits, and north China has no rice surplus for export.

Most of the foreign rice imports to Shanghai, according to the market reports referred to above, are ordered by rice brokers from Nanking, Tientsin, Hankow, and Ningpo operating at Shanghai as China's leading rice market, and this rice is then shipped from Shanghai to their respective cities. At certain periods when the Ningpo rice brokers ordered directly from Ningpo for Saigon rice, Shanghai's stores of foreign rice became superabundant and its price fell sharply, even producing a fall in the price of local rice during the planting season, as in May 1929. All of these cities are relatively more dependent on foreign rice imports than is Shanghai. The focusing of delta waterways on Shanghai, and the relatively less easy transport in the hilly or semi-arid hinterlands of the other cities mentioned, are certainly as important as the concentration of rice production in the delta in accounting for this difference.

The greatest period of foreign rice invasion on the Shanghai market for consumption in the city coincides roughly with the planting season, showing a natural lag of about one month during which Shanghai stores of local rice are drawn on. As soon as new supplies of local rice enter the Shanghai market in July, the situation returns to normal and prices are stabilized. Foreign rice is also ordered by Shanghai merchants when other natural or threatened hiatuses occur in the local supply due to weather, civil unrest, short supply in storage, or price stoppages. As a rule, these breaks in the local supply are short-lived or do not materialize.

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condition operates to approximately the same degree in all Chinese industrial centers.[39] The second operates for all Chinese industrial centers, but not to the same degree.

Only two important carriers are involved: railways and waterways. Highway transport by truck remains negligible in China, relative to the scale necessary for the maintenance of modern manufacturing, and with the shortage of fuel, vehicles, and parts as well as of adequate roads it is an impractically expensive carrier. Non-mechanized overland carriers in general use in China (porters, wheel-barrows, pack animals, carts) are also notoriously expensive, and are inadequate to handle volume movements.* Representative rates for railway transport of bulk goods (exclusive of coal) in carload lots in China during the 1930's ranged from the equivalents of US$.02 to US$.07 per ton/mile.[40] This compares with an average ton/mile rate on United States railways during the same period of about US$.01.[41] Accurate or even representative rates for water transport in China are not available, but the average for unobstructed inland routes may be estimated at between US$.018 and US$.02 per ton/mile during this period. In any case, where adequate water transport is available in China, it is a cheaper carrier than railways under present conditions, and can handle bulk shipments.

As we have pointed out above in Chapter Seven Shanghai is not a major rail center, and the two railways which serve it are not

that year under five headings. Expressed in percentage terms, these costs are tabulated, for United States manufacturing as a whole, and for the textile industry in the United States:

	All Manufacturing (%)	*Textile Manufacturing (%)*
labor and salaries	53	57
materials and supplies	37	35
fuel	2	1
purchased electric power	1	4
other	7	3
	100	100

"Materials and supplies" is not defined. No figure is given for overhead and interest, so that all of these figures must be scaled down in order to make them comparable with the figures cited for Shanghai.

* Average ton/mile rates for truck transport in China range from the equivalents of US$.30 to US$.50. For porter and wheelbarrow they often reach US$1.00 per ton/mile.

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438 316 chou, and moved to both Tientsin and Haichow by rail, whence it traveled to Shanghai by sea.

The figures for coal imports from Japan and Manchuria in 1931, 439 1932, and 1933 listed in the foregoing table owe their size primarily 438 to Japanese dumping of coal on the Shanghai market in these years at a price which was often less than two-thirds of the domestic price of coal in Japan. The table shows that while this dumping did not greatly affect sales of Kaiping coal in Shanghai, it did cut into the Shanghai market for Shantung coal in particular (Tzuchuan, Poshan, and Chunghsing). This may suggest, in the absence of complete available price figures, that Kaiping coal was relatively cheap in Shanghai and that Shantung coal was relatively expensive. A reason for this difference may be found in the long rail-haul necessary for coal moving from Shantung mines to Shanghai (120 miles from Chunghsing and 175 miles from Tzuchuan-Poshan), compared with the shorter rail haul of 79 miles for Kaiping coal to Chingwantao.

[497] Railway figures show that coal shipments arriving in Shanghai by rail in the years 1931, 1932, and 1933 averaged less than one-quarter of the railway coal shipments recorded for 1930, 1934, 1935, and 1936.[48] Apparently direct rail haulage of coal from Shantung (or from other sources) to Shanghai was not profitable in the face of Japanese dumping in Shanghai. Figures of the Maritime Customs for these years show no significant falling off in seaborne cargoes of coal arriving in Shanghai between 1931 and 1933, and in fact record a slightly higher average for these three years than for the years immediately preceding and following them, readily explainable in terms of larger imports of the unnaturally cheap Japanese coal for inland distribution as well as for consumption in Shanghai. In any case, Kaiping coal apparently had no difficulty in maintaining its position on the Shanghai market despite Japanese dumping.

438 316 Shanghai drew most of its coal from sources closely oriented to water transport. Coal deposits are widely distributed over large areas of north and central China. While Shanghai received its largest supply from Kaiping mines near the coast, and a relatively constant supply from the mines on tidewater at Haiphong, it drew